

## ABSTRACT

**[0079]** High dielectric layers formed from layers of hafnium oxide, zirconium oxide, aluminum oxide, yttrium oxide, and/or other metal oxides and silicates disposed on silicon substrates or ozone oxide layers over silicon substrates may be nitrided and post thermally treated by oxidation, annealing, or a combination of oxidation and annealing to form high dielectric layers having superior mobility and interfacial characteristics.